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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,547	01/06/2006	Yasuhiro Tanaka	09792909-6329	6870

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EXAMINER

ZIMMERMANN, JOHN P

ART UNIT	PAPER NUMBER
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2861

MAIL DATE	DELIVERY MODE
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02/06/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/542,547

Applicant(s)

TANAKA ET AL.

Examiner

JOHN P. ZIMMERMANN

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 4-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 27 December 2007.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were originally objected to by the examiner as failing to comply with 37 CFR 1.84(p)(5). The replacement drawing sheet(s) was received on 27 December 2007, and the examiner now finds the drawings to be in compliance with all rules and therefore withdraws the objection.

Claim Objections

2. The examiner has approved the changes to the claims submitted on 27 December 2007, and the objection to **claim 3** has been withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Tomioka et al.**, (US 6,517,199 B1) in view of **Schut**, (US 6,281,269 B1) and further in view of **Karl et al.**, (US 2003/0041777 A1) and **Arita et al.**, (US 6,899,751 B2).

a. As related to independent **claim 1**, Tomioka et al. teach a liquid composition which effectively prevents the elution of silicon or a silicon compound from a surface in contact with the liquid component into the liquid composition (Tomioka et al. – Title & Abstract), the composition containing: a solvent in which a pigment is dispersed (Tomioka et al. – Detailed Description, Column 12, Lines 61-63); and a hydrophobic colloid [i.e. a mixture having little or no affinity for water] that is charged with [i.e. contains cationic fine particles] a positive zeta potential (Tomioka et al. – Detailed Description, Column 10, Lines 7-10) when the pH of the composition is controlled to a range of over 4 and under 6 [i.e. a range from 3 to 6] (Tomioka et al. – Detailed Description, Column 10, Lines 55-58). Tomioka et al. **do not** specifically teach the narrow range of over 4 and under 6. **However**, Schut teaches a fluid set for ink-jet printers with a liquid composition [i.e. reactive fluid or 5th pen fluid] this liquid

Art Unit: 2861

composition having a controlled pH in a range of about 3 to about 6, more preferably from about 4 to about 5 (Schut – Title; Abstract; & Detailed Description, Column 7, Lines 7-10). Meanwhile, Tomioka et al. *do not* specifically teach the hydrophobic colloid is separate from the pigment. **However**, Karl et al. clearly teach that which was well known in the art at the time of the invention, that a liquid composition contains a pigment as well as a separate compound [i.e. hydrophobic colloid] (Karl et al. – Abstract and Description, Paragraphs 5 & 8). Finally, Tomioka et al. *do not* specifically teach the hydrophobic colloid effective to adhere to the surface, thereby to prevent elution of silicon or a silicon compound in the surface into the liquid composition. **However**, Arita et al. teach a liquid composition very similar in makeup that clearly indicates that which was well known in the art at the time of the invention, that the lowering of the pH (Arita et al. – Detailed Description, Column 19, Lines 55-59) as well as the use of a hydrophobic colloid is intended to prevent elution of silicon and silicon compounds (Arita et al. – Abstract and Detailed Description, Column 28, Lines 52-60).

b. As related to dependent **claim 2**, Tomioka et al., Karl et al., and Arita et al. each teach the hydrophobic colloid contains one or a mixture of more than one, selected from alumina, cerium oxide, barium oxide and iron hydroxide, specifically alumina as previously elected (Tomioka et al. – Detailed Description, Column 11, Lines 15-20; Karl et al. – Abstract; Arita et al. – Detailed Description, Column 21, Lines 28-30).

c. As related to dependent **claim 3**, Tomioka et al. teach the composition contains more than 3 ppm [i.e. greater than 0.0003 % by weight] of the hydrophobic colloid (Tomioka et al. – Detailed Description, Column 11, Lines 50-55).

Given the same field of endeavor, specifically a liquid composition which flows through a channel in which a silicon-containing material is exposed [i.e. piezoelectric printhead] in an ink-jet printer, it is apparent that one of ordinary skill in the art at the time the invention was made would have been motivated to combine the liquid composition made up of the elements and with a pH in the range as taught by Tomioka et al., with the specific tightening of the range in which the pH of the liquid composition falls as taught by Schut, along with Karl et al. and Arita et al. both teaching that which was well known in the art at the time of the invention, to have the ink components be separate and used in an effort to prevent corrosion of the recording head, improve the rub-off resistance of the print (Tomioka et al. – Detailed Description, Column 10, Lines 56-58), suppress the elution of silicon and silicon oxide and prevent clogging of the dispersion device (Arita et al. – Detailed Description, Column 28, Lines 52-60) and provide permanence benefits such as smearfastness, smudgefastness, lightfastness, and waterfastness (Schut – Abstract and Karl – Description, Paragraph 2).

Response to Arguments

7. Applicant's arguments with respect to **claims 1-3** have been considered but are moot in view of the new ground(s) of rejection.

8. With respect to **claim 1**, and therefore **claims 2-3**, which inherently contain all of the limitations of independent **claim 1**, applicant amended the independent claim to further specify

- i. “the liquid composition effectively prevents the elution of silicon or a silicon compound from a surface in contact with the liquid component into the liquid composition”
- ii. “a solvent in which a pigment is dispersed”

Art Unit: 2861

- iii. "a hydrophobic colloid that is separate from the pigment and prevents elution of silicon or a silicon compound in the surface into the liquid composition"

Due to these amendments, a further search was necessitated thereby producing additional prior art and more specific notation of existing prior art of record. Applicant argues that "the previously cited art does not teach or even fairly suggest a liquid composition with a separate hydrophobic component, much less that a hydrophobic component would effectively prevent elution of silicon and silicon compounds" and that while "Tomioka et al. teach a pigment that can include a hydrophobic group, Tomioka et al. does not teach or even fairly suggest that such a characteristic is required, nor does Tomioka et al. teach or even fairly suggest that a pigment with a hydrophobic group will effectively prevent elution of silicon or silicon compounds from a surface in contact with the liquid composition into the liquid composition." In response to applicant's arguments, the additional prior art clearly indicates that which was well known in the art at the time of the invention, specifically teaching a liquid composition with a separate hydrophobic component and a hydrophobic group will effectively prevent elution of silicon or silicon compounds from a surface in contact with the liquid composition into the liquid composition. While the applicant has suggested in the argument that the previously relied upon prior art of record did not fairly suggest the above mentioned items, given the fact that applicant has chosen to argue against that which was well known in the art at the time of the invention the examiner's decision to demonstrate that which was well known in the art at the time of the invention serves to merely emphasize the non-patentability over the existing prior art. As no further arguments were made, all dependent claims have been rejected accordingly.

Conclusion

9. **Examiner's Note:** Examiner has cited particular Figures & Reference Numbers, Columns, Paragraphs and Line Numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2861

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Zimmermann whose telephone number is 571-270-3049. The examiner can normally be reached on Monday - Thursday, 7:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on 571-272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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SUPERVISOR, PATENT EXAMINER